

WHAT IS CLAIMED IS:

1. A computer system comprising:
  - means for storing data;
  - means for allocating the data to classes of at least one class structure forming an object model;
  - an inference unit for generating output variables by evaluating rules; and
  - means for inputting a query command for instructing said inference unit to generating output variables by evaluating rules, the rules forming a declarative system and linking components of class structures.
2. The computer system according to claim 1, wherein the components are formed by at least one of class structures of individual classes and attributes that are allocated to classes and are passed on within a class structure.
3. The computer system according to claim 1, wherein only single inheritances are permitted in a class structure.
4. The computer system according to claim 1, wherein multiple inheritances are permitted within a class structure.

5. The computer system according to claim 1, wherein at least one of classes, attributes and data of at least one class structure are linked with said rules.
6. The computer system according to claim 1, wherein the object model or any object model forming a class structure is configured as DAML+OIL model.
7. The computer system according to claim 6, wherein the rules are formulated with the rule language DAML-L.
8. The computer system according to claim 1, wherein relations between classes and/or attributes and/or data of at least one class structure are formed in the inference unit.
9. The computer system according to claim 1, wherein the output variables are formed by at least one of the classes, attributes and data of at least one class structure.
10. The computer system according to claim 1, wherein the output variables are formed with new relations between data

and/or classes and/or attributes of at least one class structure.

11. The computer system according to claim 1, further comprising:

an editor for generating at least one of rules, class structures, and components thereof.

12. The computer system according to claim 11, further comprising a terminal allocated to said editor, wherein the classes of a class structure are input using said editor at said terminal.

13. The computer system according to claim 12, wherein attributes of classes are input using said editor at said terminal.

14. The computer system according to claim 13, wherein predetermined value ranges are allocated with the editor to at least one of the attributes and the classes.

15. The computer system according to claim 11, wherein rules are programmed with the aid of the editor.

16. The computer system according to claim 11, further comprising means for storing said rules, the means for storing associated with said inference unit.

17. The computer system according to claim 16, wherein a number of rules are stored in said means for storing said rules, and wherein a predetermined number of rules can be selected with the editor.

18. The computer system according to claim 17, wherein a predetermined number of axioms are defined in the editor, wherein a specific rule type is allocated to each axiom, and wherein a rule of the specific rule type is generated by selecting an axiom in the editor.

19. The computer system according to claim 18, wherein the axioms are mathematical terms that define the functions of the rules.

20. The computer system according to claim 11, wherein the editor comprises a graphic surface.

21. The computer system according to claim 20, wherein rules are generated using the graphic surface.
22. The computer system according to claim 21, wherein at least one of classes, attributes, and data, as well as relations among these, are visualized as graphic components in the editor, and wherein rules are defined by linking graphic components.
23. The computer system according to claim 22, wherein data are input using the editor.
24. The computer system according to claim 11, wherein the rules and class structures are checked with the aid of the editor.
25. The computer system according to claim 24, wherein an error message is generated in the editor if faulty rules or class structures are generated.
26. The computer system according to claim 1, further comprising at least one input/output unit.

27. The computer system according to claim 26, wherein a query command for activating the inference unit is input via the input/output unit.

28. The computer system according to claim 26, wherein the system performs at least one of inputting data and outputting output variables via the input/output unit.

29. A method of storing and retrieving data in a computer system, the method comprising the steps of:

    forming at least one object model, the object model including at least one class structure;

    allocating data according to one or more classes of said at least one class structure;

    providing a set of rules, the rules forming a declarative system and linking components of class structures;

    providing a query command; and

    in response to the query command, processing a series of said rules to obtain one or more output variables.

30. The method according to claim 29, wherein the step of providing a set of rules includes the step of:

permitting a user to at least one of create and edit rules.

31. The method according to claim 30, wherein the step of permitting a user at least one of create and edit rules includes the step of:

generating an error message if a faulty rule is detected.

32. The method according to claim 30, wherein the step of permitting a user to at least one of create and edit rules includes the steps of:

defining a predetermined number of axioms, a specific type of rule being allocated to each axiom; and

permitting a user to create a rule of a specific type by selecting an associated axiom.

33. The method according to claim 32, wherein each axiom comprises mathematical terms that define functions of rules.

34. The method according to claim 29, further comprising the step of:

permitting a user to at least one of create and edit at least one class structure.

35. The method according to claim 34, wherein the step of permitting a user at least one of create and edit at least one class structure includes the step of:

generating an error message if a faulty class structure is detected.

36. The method according to claim 29, wherein components of class structures are formed by at least one of class structures of individual classes and attributes that are allocated to classes and passed on within a class structure.

37. The method according to claim 29, wherein the rules link at least one of classes, attributes, and data of the at least one class structure.

38. The method according to claim 29, further comprising the step of:

forming relations between at least one of classes, attributes, and data of at least one class structure to create new rules.

39. The method according to claim 29, wherein the one or more output variables comprise at least one of classes, attributes, and data of at least one class structure.

40. The method according to claim 29, wherein the step of processing a series of said rules to obtain one or more output variables includes the step of:

forming new relations between at least one of data, classes, and attributes of at least one class structure.

41. The method according to claim 29, further comprising the step of:

inputting attributes of classes.

42. The method according to claim 29, further comprising the step of:

allocating predetermined ranges of values for at least one of attributes and classes.

43. The method according to claim 29, further comprising the step of:

permitting a user to select rules using an editor.

44. The method according to claim 29, further comprising the step of:

providing a graphic surface permitting the visualization of at least one of classes, attributes, and data and relations therebetween, the graphic surface further permitting rules to be defined by linking graphic components.

45. The method according to claim 29, wherein the step of providing a query command includes the step of:

permitting a user to enter a query command using input/output means.

46. A computer system executing the method according to claim 29.

47. A computer-readable medium containing software code implementing the steps of:

forming at least one object model, the object model including at least one class structure;

allocating data according to one or more classes of said at least one class structure;

providing a set of rules, the rules forming a declarative system and linking components of class structures;

providing a query command; and

in response to the query command, processing a series of said rules to obtain one or more output variables.

48. The computer-readable medium according to claim 47, further comprising software code implementing the step of:

permitting a user to at least one of create and edit rules.

49. The computer-readable medium according to claim 48, further comprising software code implementing the steps of:

defining a predetermined number of axioms, a specific type of rule being allocated to each axiom; and

permitting a user to create a rule of a specific type by selecting an associated axiom.

50. The computer-readable medium according to claim 47,  
further comprising software code implementing the step of:

permitting a user to at least one of create and edit  
at least one class structure.

51. A computer system comprising:

at least one processor; and  
at least one computer-readable medium according to  
claim 47.

52. A modulated data signal carrying the software code  
embodied on the computer-readable medium according to claim  
47.